Micro Commercial Components
20736 Marilla Street Chatsworth
CA 91311
Phone: (818) 701-4933
Fax: (818) 701-4939

# FR101 THRU FR107

## 1 Amp Silicon Rectifier 50 to 1000 Volts

## Features

- Lead Free Finish/RoHS Compliant(Note 1) ("P" Suffix designates RoHS Compliant. See ordering information)
- Low Forward Voltage Drop
- High Current Capability
- Fast Switching Speed For High Efficiency
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1

## Maximum Ratings

- Typical Thermal Resistance 50°C/W(Rthja)
- Operating Temperature: -55°C to +150°C
- Storage Temperature: -55°C to +150°C

| MCC Catalog Number | Device Marking | Maximum Recurrent Peak Reverse Voltage | Maximum RMS Voltage | Maximum DC Blocking Voltage |
|---|---|---|---|---|
| FR101 | FR101 | 50V | 35V | 50V |
| FR102 | FR102 | 100V | 70V | 100V |
| FR103 | FR103 | 200V | 140V | 200V |
| FR104 | FR104 | 400V | 280V | 400V |
| FR105 | FR105 | 600V | 420V | 600V |
| FR106 | FR106 | 800V | 560V | 800V |
| FR107 | FR107 | 1000V | 700V | 1000V |

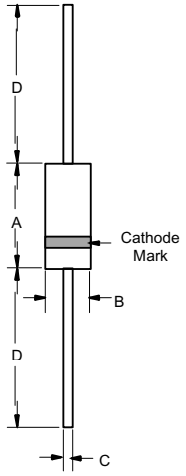
## Electrical Characteristics @ 25°C Unless Otherwise Specified

| | | | |
|---|---|---|---|
| Average Forward Current | $I_{F(AV)}$ | 1 A | $T_A$ = 55°C |
| Peak Forward Surge Current | $I_{FSM}$ | 30A | 8.3ms, half sine |
| Maximum Instantaneous Forward Voltage | $V_F$ | 1.3V | $I_{FM}$ = 1.0A; $T_A$ = 25°C |
| Maximum DC Reverse Current At Rated DC Blocking Voltage | $I_R$ | 5.0µA<br>100µA | $T_A$ = 25°C<br>$T_A$ = 100°C |
| Maximum Reverse Recovery Time<br>FR101-104<br>FR105<br>FR106-107 | $T_{rr}$ | <br>150ns<br>250ns<br>500ns | <br>$I_F$=0.5A, $I_R$=1.0A, $I_{rr}$=0.25A |
| Typical Junction Capacitance | $C_J$ | 15pF | Measured at 1.0MHz, $V_R$=4.0V |

*Pulse Test: Pulse Width 300µsec, Duty Cycle 1%

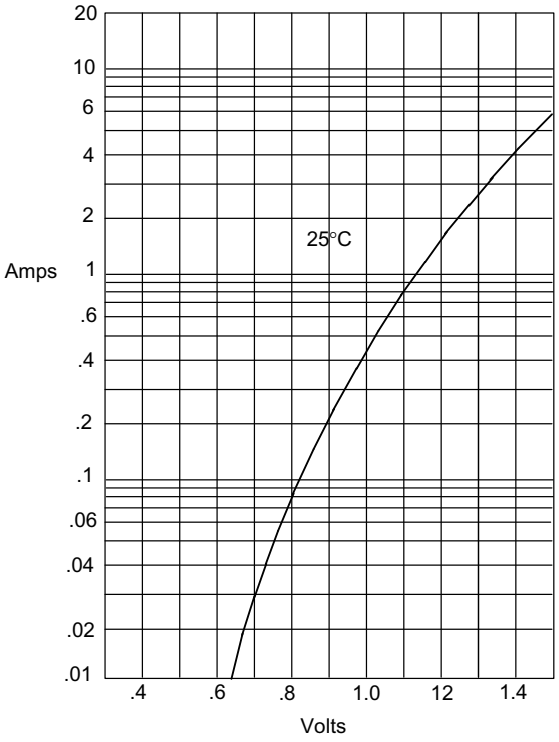
Note: 1. High Temperature Solder Exemption Applied, see EU Directive Annex 7.

DO-41



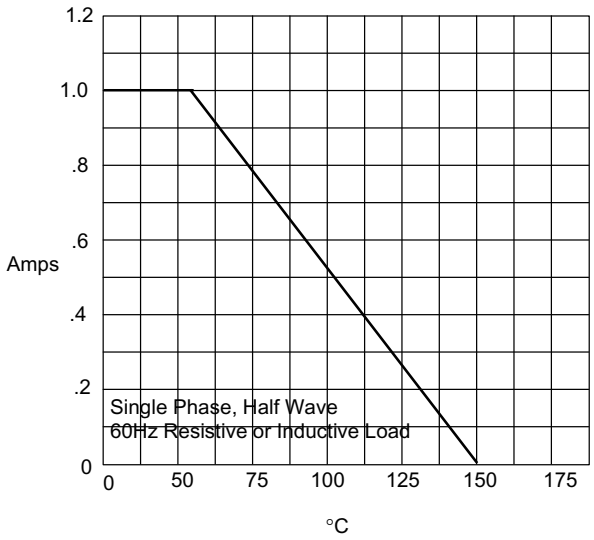

| DIMENSIONS | | | | | |
|---|---|---|---|---|---|
| | INCHES | | MM | | |
| DIM | MIN | MAX | MIN | MAX | NOTE |
| A | .166 | .205 | 4.10 | 5.20 | |
| B | .080 | .107 | 2.00 | 2.70 | |
| C | .028 | .034 | .70 | .90 | |
| D | 1.000 | --- | 25.40 | --- | |

Figure 1
Typical Forward Characteristics



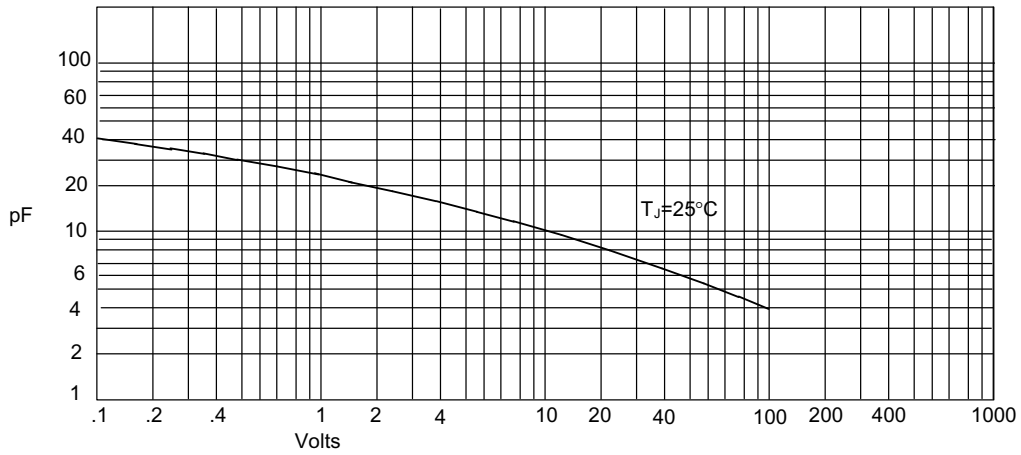

Instantaneous Forward Current - Amperes*versus*
Instantaneous Forward Voltage - Volts

Figure 2
Forward Derating Curve



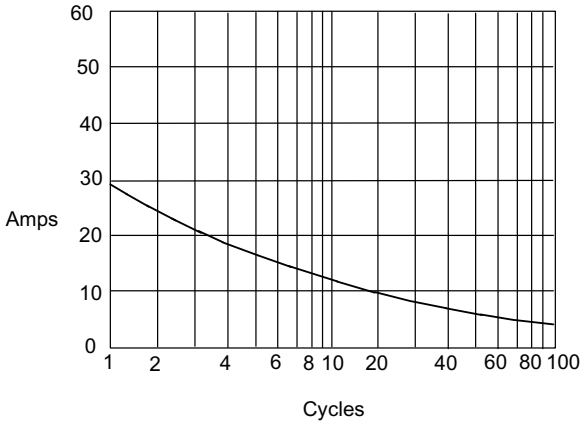

Average Forward Rectified Current - Amperes*versus*
Ambient Temperature -°C

Figure 3
Junction Capacitance



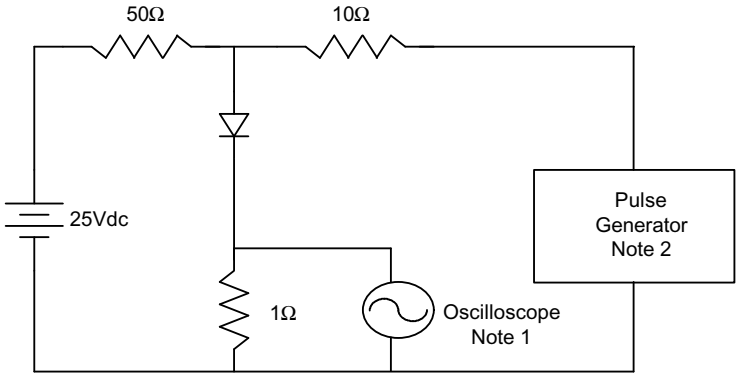

Junction Capacitance - pF*versus*
Reverse Voltage - Volts

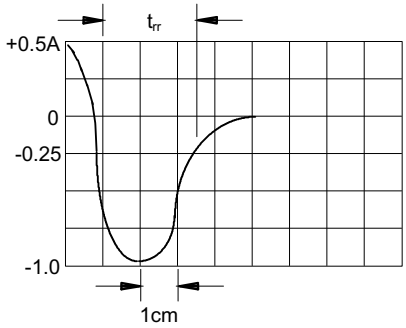
Figure 4
Peak Forward Surge Current




Peak Forward Surge Current - Amperes*versus*
Number Of Cycles At 60Hz - Cycles

Figure 5
Reverse Recovery Time Characteristic And Test Circuit Diagram




Set Time Base for 20/100ns/cm

Notes:
1. Rise Time = 7ns max.
Input impedance = 1 megohm, 22pF
2. Rise Time = 10ns max.
Source impedance = 50 ohms
3. Resistors are non-inductive

## Ordering Information :

| Device | Packing |
|---|---|
| Part Number-TP | Tape&Reel: 5Kpcs/Reel |
| Part Number-AP | Ammo Packing: 5Kpcs/Ammo Box |
| Part Number-BP | Bulk: 50Kpcs/Carton |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